ATP Industrial simulators

Accidents and catastrophes today are the most striking example of the negative impact of man on nature and climate. And it is the human factor that is the root cause of the imperfection of technologies and all accidents: scientists did not fully think, engineers did not fully finish projects, operators did not look enough. You can blame them, consider their work insufficiently prestigious, but these are the people, technical specialists, on whom the further development of events directly depends – whether the harm from existing equipment will be reduced and whether new technologies will be introduced in a timely manner. Greta Thunberg can only call for this.

Research, project and training tasks are inextricably linked, and the main difficulties in solving them are usually associated with practice. For example, the most problematic industries for the environment - energy, oil and gas industry, chemistry, and others - are characterized by the uniqueness of each of the many industrial facilities that have if not technological, then topographic features. And the greater these differences, the more important the role of the last link - the staff.

Simulators are an indispensable tool for improving the efficiency of work and developing the competencies of specialists. They accumulate research and design results in the form of process models and automation algorithms, as well as simulate the real situation of a particular object. For example, in aviation, simulators have been used for a long time and are very effective. On one simulator, hundreds of pilots practice their skills, because there are few types of aircraft, and accident statistics are comparable. But in environmentally important industries, simulators are also necessary, because objects are no less dangerous than planes. Given the uniqueness of the objects, the development of the simulator is relatively expensive. And not always spent funds are used effectively, since it is not possible to use only General statistics of accidents in the industry for forecasts for a specific object. There are very few such statistics.

We have developed unique solutions that allow generating missing accident statistics by simulating events on the simulators themselves and predicting events taking into account the psychophysiological characteristics of each potential culprit of accidents. It is important to have a scientific basis for predicting the behavior of a human-machine system, because, despite the success of automation, it is not possible to completely exclude a person from the management and maintenance processes. And if faulty equipment is often diagnosed, and we see a "red light", then this "light" does not light up on a poorly trained employee.

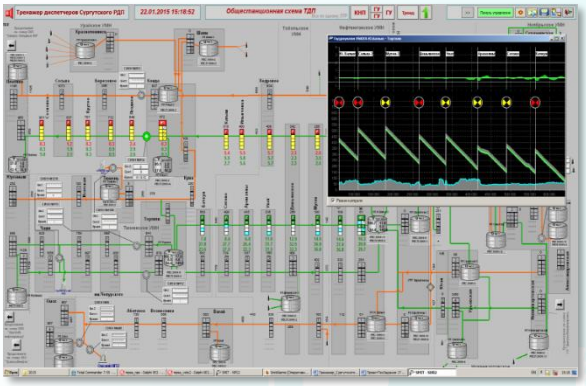
It would be very good if, in conditions of limited budgets and time, employees regularly train and check their readiness (rating) on simulators that are as close as possible to the real objects of your company. And before performing the production task, instead of the words "I understand everything", the employee on the tablet would directly show the plan of their actions in VR.

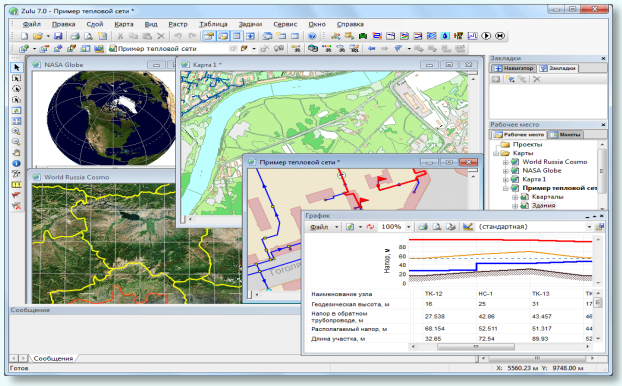
In addition to the tasks of training , certification and forming a scientifically based forecast of the behavior of specialists , modern simulators must meet several other requirements, and not all simulators of previous generations meet them. This is first of all:

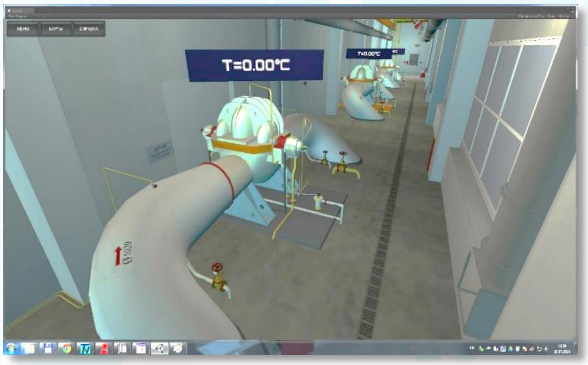
- There should be no bottlenecks in the training system, since it is impossible to spend almost the entire budget on training several operators to solve industrial safety problems. After all, the culprits of very serious damage can be any of the specialists involved in the design, management and maintenance of technological processes
- It is necessary to optimize the set of tasks, their type, rating, number of repetitions, taking into account personal qualities, since the training time is limited. Sometimes there is a description in the literature, but there is almost no scientific analysis of the training instructor's tasks
- Ergonomics, imagery, and completeness of the demonstrated processes are required – "there is nothing in the mind which was not first in some manner in the senses". In addition to the narrow problem to be solved, the specialist must present the fullness of the events taking place, their sequence and geometry. Therefore, simulators must be combined with VR/AR tools , existing models of equipment and automation , and mock- up technologies (if these samples are large or dangerous).

It is possible that the solutions of our company, ATP, will pleasantly surprise you not only with the completeness and depth of the tasks to be solved , but also with the "price-quality" ratio , which will not only save resources, but also raise the level of efficiency and industrial safety of production.

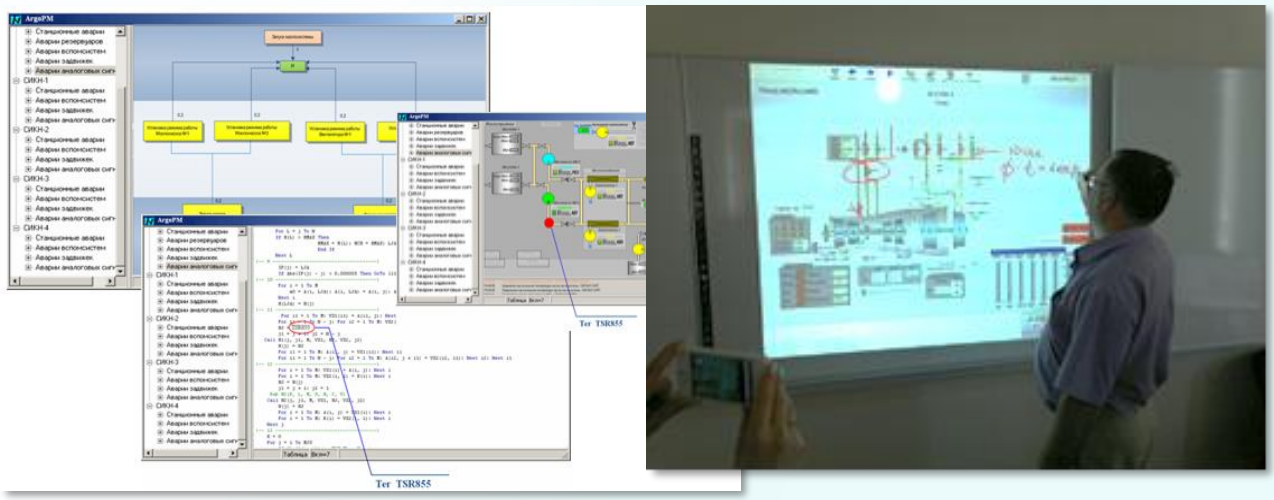
ATP solutions are advanced both in terms of technology (AR / VR, offline and online solutions, integration with software and equipment from leading global manufacturers) and in terms of meaning – unique analytical solutions are combined with the most advanced EdTech ideas . This is confirmed by numerous implementations in a number of the world's largest energy companies.



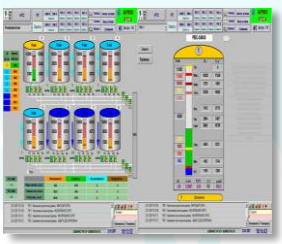




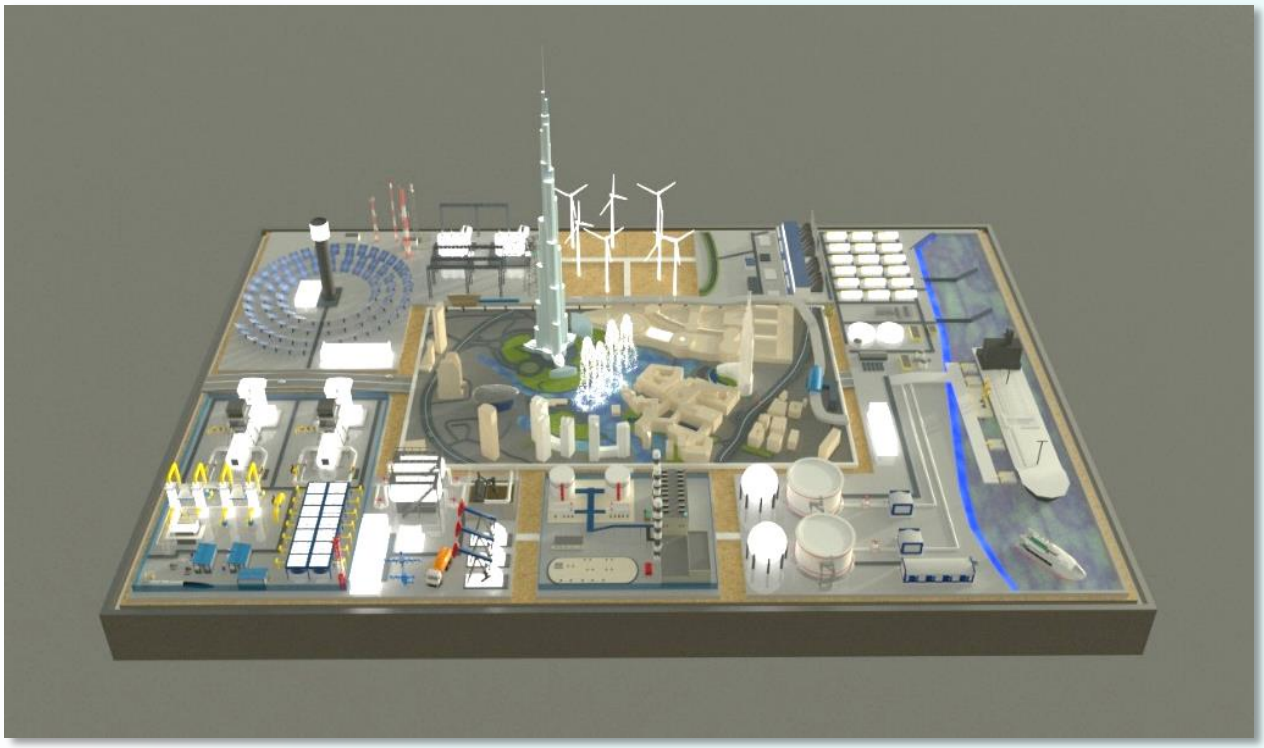
ATP solutions are scientifically sound – automated monitoring of the training process using the ranked training system allows you to build individual training plans and give clear recommendations for improving the training system itself , organically implementing the learning principles of " learning optimizing " and "on-time learning".



Special emphasis is placed on the perception of "millennials" and generation "Z" as the largest group of students. Interactive content, active visualization, and training content follow the “nuggets learning” principles.



Sustainable development programmes are supported in the projects of ATP . In addition to the visualized knowledge base , which is constantly updated, specialists learn to understand the processes, up to solving optimization problems of sustainable development with ensuring profitability and a minimum environmental footprint



Our solutions are honest – we are not tied to the interests of some major equipment manufacturers and do not lobby them . This is not their main task- to develop the competences of consumers, they should sell more of their equipment and services to consumers. Our interests coincide with those of our partners in order to use the best and safest technologies, use our own resources and personnel, and take into account the social and environmental problems of the region.